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White Paper

Measuring Performance Using the Performance Tracker

An optimization team developed a suite of RTB bidding algorithms. Campaign managers have configured the ad engine and pitched to their target audiences. Your client has settled on the attribution model and the key performance metrics.

What happens though when a campaign is not working as expected?

Digital campaigns have a lot of moving parts. A small mismatch can throw your results off. When your ad engine has optimization algorithms, pacers, and budgeters, how do you make sure they work well with each other? It is like comparing apples and oranges—a machine learning algorithm outputs probabilities, a pacer outputs bids. Then there is the challenge when assessing performance that the optimization engineers look at ROC curves, but then campaign managers have to talk to clients that care about ROI and CTR. How do you look at performance in a common way?

The Performance Tracker, *invented after years of experience in the trenches of conducting actual advertising campaigns,* is a measuring tool that allows you to compare apples and oranges in a single campaign. Specifically, it allows you to compare bidding algorithms or different components of your ad engine to determine which ones are helping or harming the campaign. It requires no outside data other than the actual inventory of the campaign itself. Compare this to A/B testing that is the gold standard for pitching better advertising strategies but that is hard to carry out in practice. For example, the campaign may have already run, and yet you would like to leverage insights from past performance to future success. How do you use the inventory of a campaign to decide on future best choices?

The Performance Tracker analyzer does not impose a model on your data; as a measuring tool, it enables you, using your selected data, to act with greater insight mid-stream in a campaign so as to not have to only leverage insights long past the campaign's expiration date. It provides clarity on your models and strategies as you are working on them during the campaign. You can compare them against each other in a non-parametric way that visually makes sense to everyone on a team: from engineers to campaign managers to clients.

Possible Outcomes

The Performance Tracker analysis of ad campaign data helps you be far better using the performance data you already have. In past studies, application of the Performance Tracker in actual ad campaigns has

- Detected ad engine components that were mis-configured, and
- Identified promising bidding algorithms that have increased ROI by up to 30% after traditional analytics like ROC curves failed to find promise.

Such outcomes also begin to fuel better decision-making around ad campaigns today and in the future as the Performance Tracker analyzer gets applied. These decision points include deciding:

- Which are the better algorithms and bidding strategies to use going forward,
- How to select better targets (audience),
- When and how to re-orient campaigns on behalf of clients before too much spend is spent, and
- When and why to argue for more ad spend, when that case is warranted by the data.

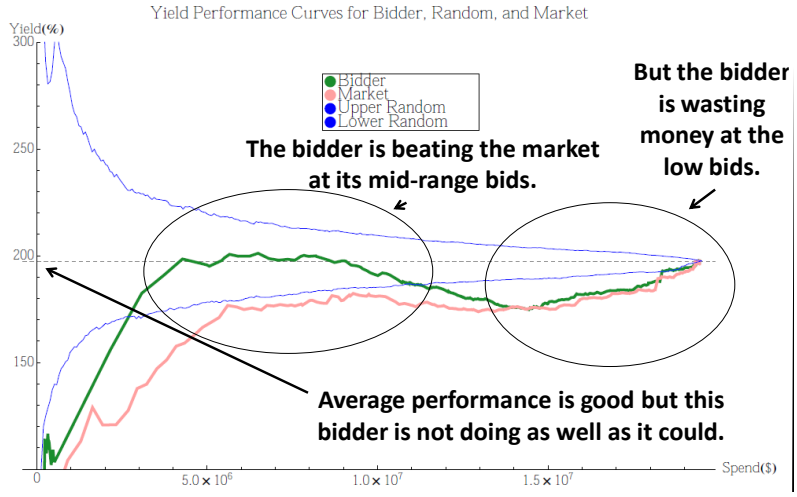
Mechanics of the Method

The Performance Tracker tool measures how your algorithms and system components are helping or hindering your campaign goals whether your measures of "goodness" are yield, ROI, or CPA. The method assumes the existence of previously purchased assets (inventory) that works with a standard data presentation (including Excel).

You can then produce, imaged as a graph, outcomes such as:

- The best ranking algorithms,
- Components of the bidding system that may be malfunctioning, and
- Detecting whether the bidding system is, in fact, doing any optimization at all.

In the following illustration, we show one application of the Performance Tracker method.



If you can put your campaign's inventory into a table that looks like this…

System Component #1	System Component #2	Other components…	Bid	Cost	Measure of Goodness (Performance metric such as CPA)

in which system components are a numerical output, such as output of pacer or output of a machine learning algorithm, then you can benefit from the insights provided by the Performance Tracker.